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ABSTRACT

This document contains three papers from a symposium on adult learning in the workplace. "Coaching: Facilitating the Training of Subject-Matter Specialists. Development and Evaluation of an Andragogical Model of Continuing Vocational Education" (Jost Reischmann) describes the new insights into the problems of continuing vocational training that were gained when a model designed to train subject matter specialists in andragogical competencies was used in approximately 70 coaching situations. In "Knowing the Self through Fantasy and Imagination: Implications for Adult Learning in the Context of Work" (John M. Dirkx), a mythological perspective and principles borrowed from Jungian psychology are used to examine the construction of self-knowledge within work-based learning. "Perceptions of Learning Systems in Organizations" (Anja J. Doornbos, Suzy J. Holleman, Ferd J. Van der Krogt, Ad A. Vermulst) reports on a study that compared the attitudes of 358 managers and workers at 9 Dutch crisis centers toward 5 learning system dimensions: work-oriented learning; external learning orientation; internal learning orientation; management orientation; and external orientation. (MN)

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Chair: Margaret Lohman, University of Iowa

Coaching: Facilitating the Training of Subject-Matter Specialist. Development and Evaluation of an Andragogical Model of Continuing Vocational Education

Jost Reischmann, University of Bamberg, Germany

Knowing the Self Through Fantasy and Imagination: Implications for Adult Learning in the Context of Work

John M. Dirkx, Michigan State University

Perceptions Learning Systems in Organizations

Anja J. Doombos, University of Nijmegen, The Netherlands
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Coaching: Facilitating the Training of Subject-Matter Specialists. Development and Evaluation of an Andragogical Model of Continuing Vocational Education

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Continuing vocational education is most often offered by subject matter specialists with limited andragogical competencies. To improve their andragogical abilities a model was constructed in which a professional andragogue coaches the subject matter specialist before, after, and directly in their courses. The implementation and evaluation of about 70 coachings opened new insights in the problems of vocational training, clarified the role andragogues can play in this context, and confirmed - though limits were found - the helpfulness of the coaching model.

Research in Germany shows that subject-matter specialists with little or no andragogical competencies - educational amateurs - offer most of the continuing vocational education and in-service-training in companies. Because of the complexity and specifics of the training contents and of their company-related expertise, companies need these subject-matter specialists and practitioners as trainers. But the short-time instructional effect as well as the long-time readiness for lifelong and lifewide learning remains limited. Educational training of these subject-matter specialists often is not the answer for this problem: Either it is not available, not effective enough, or can not be justified when a practitioner is teaching only a few hours.

Research Questions

Given this situation the research question is how to improve the quality of perception, planning, performance, and evaluation of training by training-amateurs in companies. This question not only includes the problem of higher effectiveness of the training measures but also of a transformed perception of training as personnel and organizational development within the culture of a company.

On a first level this is a practical developmental task: How can andragogical competency be brought into courses, when subject matter specialists are needed because of the complexity of the subject, but have no andragogical competency at their disposal?

On a second and more conceptual level this means to clarify the role(s) of the person(s) delivering continuing education: How is the transmission of knowledge and skills interwoven with the transformation of values and attitudes?

And finally the evaluation question has to be asked: Is such a model successful, and where are the limits?

Methodology: Model-Construction

To answer these questions a traditional educational research strategy was used: the construction and experimental implementation of an educational/andragogical model.

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Although the construction of a model is widely used in the history of education (i.e. John Dewey, Alexander Neill, Peter Petersen, Paulo Freire) it is often not perceived as a research strategy. The reason may be that we see these models (i.e. project learning, Summerhill-school, Jena-Plan-Schule, dialogic learning) as finished results and oversee the beginning implementations with its uncertainties, failures, corrections, and re-designing of practice and theory. The tentative implementation of an educational model makes it necessary to match theory with a convincing practice, and unexpected practice calls for explanation and theory. So the construction and implementation of a model is a systematic access, yet open for surprising incidents, for new or better knowledge combined with experientially tested practical results. In this function it is a research method.

The advantage of the construction of an educational model as research strategy is that

(a) in the process of developing, implementing, and evaluating the model the practicability and usefulness of the developed method is tested,

(b) in the necessary interaction between theory and practice the underlying concepts have to be clarified, and that

(c) this holistic and qualitative approach supplies the researcher with "observation within context".

Within this experiential setting empirical data (qualitative and quantitative) were collected by participatory observation in about 70 courses, by semi-structured interviews with about 70 subject matter specialists and their coaches, and through a rating scale (CERAS, Reischmann 1996) developed for this project for participants of the courses.

Theoretical Framework

Like in most situations of practical problem-solving a bundle of theories were included:

One theory this development was based on is the person-centered approach of Carl Rogers (Freedom to Learn, 1969): Learning has to be meaningful to the learner, should happen in a non-threatening environment, is supported by doing, is more successful when the learner can influence the learning content and method and take over self-responsibility, and focuses not merely on knowledge, but also emotions. In this theory we found a concept that was founded more on counseling, more on facilitating learning than instructing.

Allen Tough's work on "The Adult's Learning Projects " (1979) indicates, that most of the learning of adults happens in settings more similar to normal life than to formal schooling, and that adults undertake learning projects when real-life problems call for solutions. This corresponded to our observation, that shortly before and while the subject matter specialists were delivering their courses they were very willing to ask for support. Such an individual time-schedule could not be answered with formal training offerings, but needed individualized and flexible settings.

Malcolm Knowles' concept of "Andragogy" (i.e. 1979, 1984) developed over three decades a theory that focused on the specifics of the adult learners: their self-concept, experience, learning-readiness, time perspective and orientation to learning. Especially helpful is that he takes into account also the learning in and for the workplace. Working with the training demands of subject matter specialists which often are high-ranked specialists in their company makes it indispensable to refer to these specifics.

Several concepts were available that contributed to the perception of the described task: Peer-counseling, team-teaching, mentoring, or supervision. In addition we found that Joyce/Showers (1981, 1982) described experiences with the coaching process related to teacher-training clearly and promising. Also modern staff development theories which focus on cooperation, self-directedness, and self-responsibility influenced the theoretical framework of our work.

The Model: Coaching the Subject Matter Specialist

To increase the quality of vocational training a "tandem"-situation was developed: the subject matter specialist is individually "coached" by an adult educator before, during, and after the course.

Interviews in a pre-study with six IBM managers had shown, that "Coaching" is a term widely used for various concepts and contents - every modern strategy seems to be labeled "coaching". So first a distinct concept of coaching was formulated:

With "coaching in continuing education" we label a training situation in which the subject matter specialist is supported by an adult educator in planning and conducting one specific course. The content competency and the andragogical competency are brought into a course by two separate persons. The subject matter specialist remains responsible for the content, while the adult educator helps him/her to design and conduct the course in a way that facilitates learning. This coaching is seen as an individualized support for limited time: coaching lasts between three and eight sessions; after that the subject matter specialist goes on again on his own. This limitation keeps both aware that the training is and remains within the responsibility of the subject matter specialist, and that the coaches offerings are a passing chance.

The activities of the adult educator as a coach are: Before and during the course (pre-coaching) he/she helps to design the course and the sessions. After the sessions (post-coaching) he/she gives feed-back and helps to plan the next session. This resembles traditional counseling and supervision. Also the coach is present in the course for observation which supplies the information for feedback. In these activities the coach offers as well clarification as information: Clarification why processes develop(ed) in a certain way, information about methods and how to handle them. In addition - and this is what is particular about our coaching - the adult educator plays an active and responsible role during the course-meetings. The coach takes over pre-planned actions like introducing the participants, giving learning-aids, introducing special methods such as group-work. Hereby the coach serves as a model. He/she also becomes spontaneously active when it seems necessary.

These activities are - first - aimed to increase the educational competency of the subject matter specialist for subsequent courses. The suggestions and feed-backs in the pre- and post-coaching are explained and give a situation-specific introduction into adult education methodology and philosophy. Theory becomes directly related to practice. The suggestions and feed-backs refer to the individual subject matter specialist, his concrete needs, the specific topic and situation. Answering real-life problems makes this exchange meaningful and related to doing. By demonstrating educational behavior directly the coaching adult educator acts as a model (Bandura) - and not the usual schoolmaster-style: telling others what they must do, while sneaking away from showing competency.

These activities are - second - aimed to increase the success of the course: directly through activities of the coach, indirectly through the teaching of the subject matter specialist improved by the coaching.

This complex andragogical activity, including counseling, observation, modeling, and supervision, we call "coaching". The difference to peer-counseling or team-teaching is, that both persons are experts - but in different fields. So there is no reason for competition: both experts do their job, trying to let the other participate in his/her competency, exchanging, sharing, caring together for the best learning success.

Of course it is not expected that such a shorttime coaching makes subject matter specialists into educational experts. Depending from which educational competencies the subject matter specialist started, coaching wants to prepare for a next step by offering genuine andragocical perspectives applied to the subject matter specialists individual training task.

How to become a "Coach"?

Coaching is executed by professional adult educators. The variety of situations and contents they are confronted with, the necessity to act and react immediately, the ability to take care of the subject matter specialist as well as the participants makes it inevitable that they have at their disposal a wide variety of educational theories and methods. And it is necessary that they are able to intervene in a style and mood that does not offend or threaten either the subject matter specialist or the participants. Counseling competence is helpful for this.

For persons who studied adult education (mostly students of our department) and for experienced practitioners (two major car-manufacturers) we developed four days of training. About 150 persons going through this training reported after their first practical coaching experience that they were able to apply the basic coaching-ideas and coaching-strategies after this training.

Results and Conclusions

More than 150 coachings by different coaches have been accomplished. Besides the direct experiences, qualitative and quantitative data were collected.

Experiences with the implementation: The first of the implementation experiences is, that institutions and subject matter specialists often hesitated to try this arrangement. They found the idea convincing, but either regretted that „Right now I have no suitable training" or did not want to do it themselves: „I know somebody who would really deserve coaching". There seems to exist a high level of fear to allow somebody to observe training. But when one or two trainers could be convinced, then based on their experience other trainers asked for coaching.

A specific difficulty was the activity of the coach in the courses. Only half of the subject matter specialists allowed this, the other half limited the attendance of the coach to observation. Teaching and training as a cooperative venture seems unthinkable for many trainers, thus continuing the image of the lonesome fighter.

An unexpected but repeated observation was the divergence between how subject matter specialists described their planned courses and how they acted in the real course situations. Counseling and supervision, relying on the description of the actor, seem after this experience often based on unrealistic data.

In a certain type of training, coaching was more or less impossible: In "high-pressure-lectures" when the subject matter specialists were oriented solely to presenting their content, and when they wanted to present too much content. The subject matter specialist neglected even simple arrangements planned in the pre-coaching, for example taking a break. By trying to interfere the coach was made responsible for the fact that not all material could be presented - which made the subject matter specialist nervous as well as the participants. Here we learned to withdraw to pre-coaching and reviews/feedback as interventions.

Besides these limitations coaching was found to be applied in a wide variety of courses. Various contents (hard technical or soft creative) could be coached as well as different participants (managers or apprentices) or training schemes (full day or 90-minute units, long-planned or shortly started). It also turned out that our type of coaching was applied not only in companies, but in adult education centers, religious institutions and military education, even in schools and at university (my students coached each other in seminar-presentations). And surprisingly it made sense not only for inexperienced trainers we had designed it for, but also experienced and trained teaching-specialists reported positive experiences. Some coaches even reported that they transferred strategies of our „coaching in continuing education" to learning situations which had to do nothing with teaching courses, like helping managers handling staff or customer problems.

Qualitative Evaluation: At the end of each coaching subject matter specialists were asked for written feedback about their perception of the coaching situation (process) and the results they see for their future courses (product). Similarly the coaches delivered a report. Reports of about 70 coachings are available. Also participants of these courses were interviewed.

The counseling in the pre-coaching and review situation was very positively evaluated. "I absorbed the methodical and didactic suggestions like a dry sponge ... I could have reduced my preparation to half, if I had the coaching earlier".

Interviews with the subject matter specialists showed that the presence and activities of the coach during the courses were seen ambivalently. As described only half of the subject matter specialists allowed the coach to become active in the course. When coaches could become active the subject matter specialists often criticized that the additional structuring and repeating by the coach cost extra time. Positive statements were made about the coachs activities (for example: preparing the chairs and tables, activating the participants, introducing participants by name, presenting visual aids, introducing breaks, and helping individually). A surprising number of didactic operations of the coaches were perceived and named in the final interview. It seems, that the subject matter specialists used these times of non-activity - as intended - to observe the educator in a relaxed mood: "I could observe your dialogue with the participants by standing aside".

Intended consequences for future courses were reported by most of the subject matter specialists. That included certain operations - introducing the participants, structuring the presentation, including exercises, taking breaks, using visual aids, reducing and concentrating

the content - , but also more general attitudes: "to make more personal contact", "to include the participant more in the course", "I conducted the course as a mathematician, not an educator ... That I want to change", "What I learned is to keep an eye on the learners", "there remained a lot of ideas that are helpful in a course - just the knowledge, how many possibilities a trained educator has, that are not available to an engineer". Of course we do not expect that all these intended consequences will be practiced in the next course. But our evaluation shows that our coaching opened the eyes of the subject matter specialists for educational ideas and operations.

We also asked for feedback from the participants. In the "high-speed lectures" we could not get much feedback. Here coaching was often perceived as an intrusion in a closed system: One subject matter specialist reported that participants complained that the coach going to the blackboard was insolent.

But most other courses found the presence of two persons surprisingly normal, although they recognized, that there was no perfect team-work between the subject matter specialist and the educator.

Quantitative Results: For the quantitative evaluation, four pair of courses were used in a pre-experimental design (Campbell/Stanley 1967): When a course is repeated (same content, same course leader, other participants), the second course was coached and the first used for control. Using CERAS (Course Evaluation Rating Scale) the dimensions "perceived learning success", "experienced learning support", "climate", and "readiness for further learning" were controlled.

The dimension "perceived success" did not show much difference, while in the three other dimensions the coached courses scored better. An explanation for the similar rating in dimension "learning success" could be that the coaching activity repeatedly activated the participants to control their learning success. This made them aware of gaps and failures, while the courses not coached left them more passive and in the uncontrolled feeling of being successful.

Respecting that the coachings were the first we did with these course leaders and lasted only between three and five half days it is positive that after such a short time already effects could be observed by the participants.

Contribution to new knowledge in HRD

A first contribution to the knowledge in HRD came even before coaching started: The direct observation of a great number of subject matter specialists as trainers nearly unanimously revealed a shocking inability of teaching. That everybody who knows something can teach it turned out as a dramatic myth!

An overt contribution is the development of an additional training scheme for the improvement of continuing education in companies combined with a way to qualify subject matter specialists for training. Our experiences so far showed limits as well as possibilities: In several settings - as described not in all - coaching could be arranged and was perceived helpful. The coached subject matter specialist reported, that they felt a lot of support through our coaching, and that they intend to change their following courses. So coaching seems to be a way to bring andragogical competency into courses.

To qualify "coaches" a four days training for professional adult educators was developed. Trained coaches reported that this enabled them to act as coach. Even more they reported that this approach influenced and changed their perception of their work in HRD in an often transformative way.

On a conceptual level the unclear term "coaching" could be clarified and discriminated against other concepts as counseling, supervision, team-teaching, or mentoring.

The "division of labor" between the subject matter specialist and the adult educator, such decomposing the teacher-role that combines didactic and subject-matter knowledge, helped to clarify the role of the adult educator. Even in technical training it became clear that in all teaching/learning context content- and attitude-learning is interwoven.

Through this experimental model it became obvious that training in a traditional way supports the "lonesome fighter" mentality. Coaching offers - for many learners first time in life - a life-example of cooperation between two equal adults.

This developed model of coaching combines theory and practice of HRD. It contributes to solve a practical problem. Even more it helps to clarify the role and importance of professional adult educators in the context of the culture of a company.

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Knowing the Self Through Fantasy and Imagination: Implications for Adult Learning in the Context of Work

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Recent studies suggest that work-related learning has a profound effect on our sense of self. Emergence of transformational theory within adult learning provides a framework for understanding these processes of self-knowing. Yet, research and theory is dominated by an heroic perspective, in which transformation results from effort of a rational,conscious ego. Relying on a philosophy of imagination and Jungian psychology, transformative, work-based learning is re-visioned here as a journey of soul, in which image and fantasy mediate processes of self-knowing.

A well-known professor of education once remarked, in a graduate seminar, that he doesn't like the term "learning" because it is used so loosely and no one really knows what it means. If there is such a thing as educational heresy, this statement must be a prime example of what such a sin might look like. Yet, as a student of adult learning, Professor. P's statement had a profound effect on me, engendering a healthy skepticism regarding just we do mean by learning, especially as it refers to work. Because of my prior training and experience in the health professions, Professor P's heretical claim drew me to the question of the problem of meaning in learning - what it means to really learn something and what that learning means to the person engaged in it. Within work-based learning,[1] researchers and practitioners have tended to view the idea of learning as a process of acquiring specific information and abilities to perform given skills defined by the nature of the work one does. In this perspective, understandings are objectified and meaning is treated as if it is something outside of or beyond the individual's experience. The purpose of learning, then, is for the individual to receive and acquire these named meanings as part of his or her knowledge base. The constructivist turn in education (Brooks & Brooks, 1993; Steffe & Gale, 1995), however, has challenged this preoccupation with a technical-rational view of learning. Fundamental to the constructivist perspective is the idea of learning as meaning *making* (Mezirow, 1991), processes by which individuals and groups interpret, understand, and make sense of their experiences (Jarvis, 1992), ways in which they actively confer value, quality, and purpose on their experiences (Sloan, 1983). From this point of view, meaning is *constructed* by those engaged in the leaning process, rather than passively *received* from voices of authority. Thus, learning as meaning-making is bound up with one's sense of self. Within work-based learning, making sense of our experiences is making sense of our lives, of who we are as persons. It is coming to know our selves in the context of the work we are attempting to learn to do or to do better.

Within this paper, I take as my problem the construction of self-knowledge within work-based learning. The limited amount of research and theory which addresses this problem is dominated largely by rational, socio-cognitive frameworks. Seen from this perspective, learning to work might be understood mythologically as a journey of the hero, centered in ego-consciousness. Less well developed, however, are the ways in which imagination, fantasy, and other non-egoic processes shape and influence the meaning of work-based learning. I suggest that, when viewed from this point of view, the development of self-knowledge through work-based learning represents Psyche's invitation to a different kind of mythic journey, one emanating within soul consciousness. I conclude with a consideration of what such a view of work-based learning might hold for education-for-work programs.

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[1]With the use of the term "work-based learning," I intend all forms of learning related to one's role as a worker within some organizational structure. Thus, I would include preparation programs, continuing or inservice education, apprenticeships and other on-the-job training programs. Within work-based learning, I also include informal and incidental as well as formal experiences of learning.

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The Relevance of Self-knowledge to Work-based Learning

If we take work-based learning seriously and its contribution to our sense of who we are as persons, we necessarily confront the problem of meaning in learning. As Jarvis (1992) and Mahoney (1991) point out, our notions of meaning tend to define our understandings of learning. From a technical-rational perspective, the idea of learning represents an act in which meaning has been named, objectified, and located in contexts external to the individual. Individuals learn when they provide evidence that they have taken in or internalized these external representations of meaning. This *received* view of meaning is prominent in most formal and informal programs of work-based learning. For example, much of what I was asked to do in my formal, undergraduate training to be a clinical microbiologist involved mastering meaning codified in concepts, theories, models, formulas, and facts. My more informal, inservice learning also consisted of mastering meaning codified in laboratory tests, techniques and procedures. During this time, I was also socialized into the culture, mores, and values of my profession and the organization for which I worked. This focus on learning as acquiring meaning codified in "objective" bodies of knowledge has largely been the preoccupation of theorists and researchers concerned with understanding and improving work-based learning. Even many studies of socialization-related learning assume that some important form of meaning is being transmitted to and received by the learner through the context of the organization's culture. In this view of work-based learning, the self is understood in relatively passive terms, a willing recipient of structures of objectified meanings which, when acquired, contribute to the development of the sense of self as a more skilled or knowledgeable worker. Much of my formal learning as an undergraduate seemed to be guided by this notion of meaning. Knowledge is seen as objective, apart from the learner, and instrumental in nature - directly applicable to the demands of the work context. Learning is considered a rational process and reason mediates between the subjective experience of the student and an empirically demonstrable reality of the workplace.

From a strictly technical-rational point of view, processes of self-knowing appear to have little to do with work-based learning. If we are concerned with the problem of meaning in learning, however, this perspective proves to be quite inadequate for developing a deeper understanding of what it means to learn and what it is that is actually learned. By its very nature, this form of knowing does not address questions of quality, meaning, or values (Sloan, 1983). When formal learning is framed in this manner, it often results in fragmented knowledge about our selves and the world and is ultimately alienating rather than humanizing. Incorporation of "active learning" and other humanistic or "student-centered" strategies often does little to alter fundamentally technical-rational conceptions of knowledge. These strategies seem designed to evoke learner enthusiasm and interest in acquiring the codified bodies of meaning, rather than to ground learning concretely and meaningfully within one's experience. They do little to help learners understand the deeper meaning of what it is they are trying to learn - the purpose or sense of direction, values, and qualities that are evoked within them by the study of the content.

Two broad trends in research and theory, however, suggest a fundamentally different orientation to the problem of meaning in workplace learning. They provide a kind of invitation to consider the significance of self-knowing to one's development as a worker. The first of these is a growing recognition and acceptance of the intrinsic centrality of work within our lives. Work is one of the most important life phenomena that manifests itself during the adult years, a central psychological and social force we experience as individuals and as a society (Merriam & Clark, 1991; Smelser, 1980). Various strands of literature seem to underscore this observation, such as recent popular works by Sinetar (1987), Autry (1994), and Richards (1995) on the meaning of work in our lives; the spirituality of work literature that has emerged within the last 15 years (Bolman & Deal, 1995; Chappell, 1993; Fox, 1994; Hawley, 1993; Whyte, 1994); philosophical (Arendt, 1958), psychosocial (Smelser & Erikson, 1980) and sociological inquires (Schor, 1992); and studies of organizational behavior (Pauchant & Associates, 1995) and transformation (Adams, 1984; Fletcher, 1990). Taken as a whole, this body of literature beckons us to consider the meaning of work in our lives and what it means to learn to work. It suggests that the world of work is woven inextricably into our lives and our lives shape and influence what meanings we hold for work. Rather than work being something which can be understood apart from our contexts and who we are persons, its meaning seems bound up, in a deep, perhaps even spiritual way, with our sense of self.

For example, in the course of my learning to become a clinical microbiologist, I developed an intense fascination with host-parasite relationships, an interest which quickly grew more broadly into philosophical considerations that lead me out into the world of ecology, psychology, sociology, and, ultimately teaching and

learning. This aspect of my training became a basis for not only future career moves but a deeper understanding of my self in relation to the world. It further fueled my interest in learning about the work that I did. Technically, I needed to know none of this to isolate and identify disease-causing organisms from human tissue and body fluids. The idea, however, of host-parasite relationships, which was manifest in each culture that I performed, held far more meaning for me as a health worker. In this case, the intersection of the self and the work resulted in both an enhancement of self knowledge and of the work that this self was asked to perform.

A growing body of literature has been focusing on understanding work as a natural expression of our humanness (Arendt, 1958; Csikszentmihalyi, 1990; Deems, 1997; Fox, 1994; Hillman, 1983; Pauchant & Associates, 1995; Welton, 1991). In this tradition, work is seen as a manifestation of innate propensities we have for realization or actualization of our sense of who we are as persons and communities, a primary site of adult learning and development. Thus, work itself is critical to understanding how we come to know and understand ourselves as individual workers and as members of an organization. Through the psychological, social, and cultural intersections that work weaves throughout our lives, it represents a profound site for constructing our sense of self.

The second area of research and theory which invites a different understanding of meaning in work-based learning is the emergence of constructivist notions of learning (Steffe & Gale, 1995). Constructivism challenges our long-held assumptions about what it is we come to know and how we come to know it (Brooks & Brooks, (1993). Rather than meaning residing outside of the learner's experience, such as in the requirements of a given job or the expectations of a particular organization, constructivism suggests that meaning is created within the interaction of the learner with the context of one's work. In a sense, the learner constructs what it is he or she needs to know to do the work within a particular context. This view does not deny the existence of factual information or the presence of particular procedures or ways of doing things. It does, however, place emphasis on the worker-learner for naming and conferring meaning on these bodies of information or sets of actions. I may be able to set up a bacterial culture using prescribed sets of techniques taught to me by others. But the meaning, value, and purpose of these techniques are derived from *my* constructions, what meaning *I* confer upon them. Thus, my experiences and contexts are central to the process of making sense or meaning of what it is that I am learning to do. Constructivist approaches to knowing and learning in work stress the importance of context, the role of learner experience in what and how one comes to know, and the learner's construction of knowledge (Brooks & Brooks, 1993). This perspective represents a sharp departure from traditional, technical-rational approaches to learning. When we learn to work, we learn more than the knowledge and skills required of our jobs or even the values, attitudes, and norms reflected in our occupations and the organizations for which we work. We come to understand the ways in which our sense of who we are comes to be expressed through the work that we do. What it means to learn to work and the meaning of what we learn to do involves far more than simply acquiring a prescribed body of knowledge and an ability too use that knowledge within specific contexts.

Recent studies of the workplace suggest that the ways in which our sense of self is constructed and re-constructed over time significantly influence all aspects of work and its structure and organization. When persons and groups participate in work-based learning, they engage in a process of re-constructing the individual and collective self. Thus, notions of the self and how we come to know about the self are critical to our understandings of what it means to learn within the context of one's work. Transformational theory, (Clark, 1993; Cranton, 1994, 1997; Dirkx, in press; Mezirow, 1991, 1995; Taylor, 1997) directs our gaze to the complex, dialogical, and transactional relationship between work and the self, and provides a framework for deepening our understanding of work-based learning.

Transformation theory suggests that certain forms of learning have a profound influence on our views of ourselves and our relationships with the world. With few exceptions, however, meaning-making is conceptualized within transformation theory in largely rational terms and the process of coming to the know the self is viewed through socio-cognitive frameworks. These interpretations of the self convey a sense of an heroic journey undertaken by a rational ego in pursuit of consciousness and enlightenment, an image of learning particularly evident in education for work and workplace learning. Relatively little attention is given to the emotional, spiritual, and extrarational issues which arise when learners and their experiences are fully engaged with each other and the work context in interpersonal and collaborative methods (Dirkx & Laswell, 1994). Non-egoic or extra-rational psychological processes within transformative work-based learning are often minimized or even ignored all together. Others interested in redressing what they consider to be major limitations of Mezirow's rational view of transformative learning recognize the significance of these issues in

making learning meaningful and transformative (Taylor, 1997). The emotional, spiritual, and non-egoic dimensions of transformative learning are further supported by the burgeoning spirituality of work literature. Yet, these preliminary views do not provided a theoretically well developed understanding of the extra-rational, non-egoic processes of self-knowing. Without such development, we are in danger of re-defining transformative learning as largely an emotional experience, with relatively little rational, conscious participation on the part of the individual. Neither perspective seems satisfactory for a deep understanding of transformative learning.

The core of the problem, then, in understanding meaning-making and self-knowing in work-based learning is an unquestioned belief that meaning and self-knowledge are derived from a rational consideration of the context of work in light of one's experiences, that meaning and knowledge are ultimately derived from rationality. While helpful in some respects, this view of work-based learning virtually ignores the role that imagination and fantasy play in coming to know our selves as workers within particular organizational contexts. In the remainder of this paper, I sketch an alternative conception for re-visioning how we construct meaning and self-knowledge through work-based learning. This perspective relies on a philosophy of imagination and archetypal psychology, in which meaning and truth are revealed through imagination and fantasy - a poetics of mind - and not merely rational ways of knowing. Building on prior work in adult learning with this tradition (Boyd, 1991; Boyd & Myers, 1988; Briskin, 1996; Dirkx, 1997, 1995; Dirkx & Deems, 1996; Nelson, 1997; Scott, 1997), I argue for a view of transformative, work-based learning that is mediated by images and reflects a journey of the soul.

Re-visioning the Meaning of Work-based Learning: Psyche's Invitation

The fundamental premise being developed here is that work-based learning provides a rich context for fostering a kind of self-knowing that enriches both the worker and the workplace. Furthermore, these processes are potentially transformative and fostered through imaginal approaches to the context of work. When work is viewed as intrinsic to who we are as persons, notions of the self and how we come to know about the self are critical to our understandings of what it means to learn within the context of one's work. The perspective I am trying to develop seeks a deeper understanding of the emotional and spiritual dimensions that are often associated with profoundly meaningful experiences in work. By approaching these experiences imaginatively rather than merely conceptually, learners locate and construct, through enduring mythological motifs, themes, and images, deep meaning, value, and quality in the relationship between the context of work and their own life experiences.

A philosophy of imagination challenges exclusive reliance on rational and conceptual modes of knowing and learning and the technicism and literalism they foster. A philosophy of imagination "places the image over the concept, the speech over the argument, and the mythic divination over the fact" (Verene, 1981, p. 30). When speaking about imagination, image, the imaginal, and fantasy, I use these terms not in the sense of imaginary, fictive, or otherwise unreal, but as "the central importance of imagination and insight in all our thinking and knowing....our means of interpreting the world...also our means of forming images in the mind" (p. 140). Images are *the way* in which we perceive, see, and come to know ourselves and the world. They play a critical role in making sense of our experiences by allowing us to find value and meaning in them (Hillman, 1989, pp. 21-22). Fundamentally, understanding flows from images and not rational categories. As Moore (1992) suggests, "We have a longing for community and relatedness and for a cosmic vision, but we go after them with literal hardware instead of sensitivity of the heart" (p. 208). "Thinking" our way through this mind-body split is, according to Moore, part of the problem and not a resolution. He suggests a another possibility, one in which imagination connects us, through its images, in a deep and profound way with the depth of our being. This is the path of soul or mytho-poetic consciousness.

A fundamental premise of the present view of work-based learning is that work represents a potential context for connection with and nurturing of soul, of deep imaginative approaches to understanding ourselves and our relationship with the world. As Auger and Arneberg (1992) suggest, "The changes that have been occurring in the workplace and workforce have given the meaning to the word *work* that Jung attributed to it more than forty years ago - that it is Psyche's invitation to personal transformation and individuation." Within this perspective, the *psyche* or soul is central to understanding who we are as persons and as a society. Soul manifests itself in consciousness as a search for meaning in life. Moore (1992) suggests that "Tradition teaches us that the soul lies midway between understanding and unconsciousness, and that its instrument is

neither the mind nor the body, but imagination" (p. xi). It is not a thing but a quality of experience - of life and of ourselves. Soul has to do with heart, depth, relatedness, depth, and personal substance. Hillman (1975) suggests that

> the word refers to that unknown component which makes meaning possible, turns events into experiences....soul refers to the *deepening* of experiences....the imaginative possibility in our natures, the experiencing through reflective speculation, dream, image, and fantasy - that mode which recognizes all realities as primarily symbolic or metaphorical. (p. x)

The mytho-poetic perspective, represented in the work of Jungian, neo-Jungian, and other depth psychology scholars, such as James Hillman, Robert Sardello, Thomas Moore, Giesela Labouvie-Vief, and Marion Woodman, places primary importance on recognizing and understanding the images which populate and animate consciousness. These images represent gateways to the unconscious. The self is understood and experienced as inner entities which seem to have a life of their own, such as "intentions, behaviors, voices, feelings, that I do not control with my will or cannot connect with my reason" Hillman, 1975, p. 2). There is an aspect of my self that is ambitious, wants to achieve, be famous and respected by my peers. This is the keynote speaker, the well-known author who monitors his book sales almost daily. There is another aspect of myself which is troubled with this person, finds him ego-centric, self-centered, and not terribly sensitive. This is the monk, the one who wants to go about his work quietly and thoughtfully, living simply and close to the earth. These are examples of the "selves" that call my psyche home. There are others as well, all manifesting themselves in various images and shapes within my conscious awareness at various times in various contexts.

These age-less, universal voices take form and substance through images, which manifest deep and profound feelings and emotions about who we are and how we feel about our life experiences. In his approach to understanding emotions within his own life, Jung described the close relationship between image and emotion: "I learned how helpful it can be...to find the particular images which lies behind emotions" (Chodorow, 1997, p. 26). In rev-visioning a way of knowing through imagination, Hillman (1975) stresses the need to grasp the archetypal significance that is carried in the depth of our words. Images are ways through which individuals and collectives potentially come to express and connect with this deeper reality. Images are "angels" or message-bearers of the soul and, consequently, represent the depth of our experiences. Soul is not merely manifest in one's inner images but also in shared ideas within the world as well (Hillman, 1975; Sardello, 1992). They are reflected in big words or concepts, such as Truth, Power, Justice, and Love. These are ideas that animate not just individuals but groups of people and even whole populations. When we speak of soul within an organization, it is likely that we are participating in or at least observing the manifestation of one or more of these big ideas. The power of these ideas rests not with their intellectual heritage alone but with their capacity to activate the imagination, to invite persons to engage in imaginative ways with themselves and their work context. They connect us both with deep aspects of our inner life and with enduring qualities of life as a member of a community.

Charged images often represent complexes, in which we encounter psychic energy that is clustered around certain concerns or issues that usually reflect various aspects of our relationships with others. Common examples include the authority, mother, father, and ego complexes. When they present themselves, they carry with them an imperative quality - we are compelled, drawn into, and taken over by them. It is as if, for that moment, consciousness emanates from another place within us, other than one's ego. Bursts of insight, intuition, and the "eureka" experience, as well as strong moments of anger and sadness illustrate how these images serve as conduits or messengers for deeper entities within the human and collective psyche. Working with images draws us down into ourselves but, paradoxically, also out into the world. This idea of soul as bridging inner experiences with aspects of our outer worlds is a key idea to understanding how this imaginal world is manifest within our learning experiences and how it mediates transformation within work-based learning.

Working with the Image in Work-based Learning

So what does all of this then have to do with fostering self-knowledge within work-based learning? How do multiple selves, big ideas, and soul relate to education-for-work programs, for continuing education or training within work, or informal learning on the job? The notion of soul in work-based leaning is predicated on the assumption that, in and through work, we connect with and express in a fundamental way who we are as persons and organizations. Work puts us in touch with the archetypal nature of our being. It is in working -

what we do and the relationships we establish with others in our work - that we give voice to this deeper essence of who we are. By becoming aware of these forces, by participating with them in a more conscious manner, we are less likely to be unwillingly buffeted around by their presence in our lives. When we enter in a conscious dialogue with them, we create the opportunity for deeper meaning and more satisfying relationships with our work. The basis for this active engagement and dialogue is imagination. In working with the imagination, it is important to differentiate images as constructions of our conscious, cognitive egos, and images which arrive as angels or message-bearers from the psyche. It is the latter which is the focus of learning through soul. From the mytho-poetic perspective, images and fantasies which flow from the work of the imagination are not under the willful control of the ego. They are not cognitive constructions which we work to create. Rather, they arrive as they so choose, as acts of grace, relatively independent of the needs and desires of the ego. For me, the idea of host-parasite relationships represented such an image, a presence of grace within my worklife. I did not consciously select this idea from a number of "interesting" possibilities. It drew me to it, through books, articles, and experiments. Like Marley's ghosts in *A Christmas Carol*, this image beckons me to vistas and realms of meaning not open to my ordinary, waking, ego-based consciousness. It was no accident that these ghosts appeared to Scrooge during sleep, in the middle of the night. But they transformed his sense of self and his relationship to the world.

Imagination and the imaginal method are critical in recognizing, naming, and understanding the meaning of images concealed within our deep, often emotional experiences of work (Hillman, 1975), but we do not create the images or their meanings through these methods. Our soul work - our learning - is to recognize, elaborate, and differentiate them as a means of developing a deeper understanding of our experience in the context of work. Strong emotions and deep feelings arising within some aspect of work suggest engagement with soul. In work-based learning, these emotions and images may arise in association with the "text" or the content or skill being learned, or within relationships with others within one's workplace or learning setting. In my own clinical training, we might think of the host-parasite relationship as one of these images. In addition to being a clinical concept, this idea represents an emotionally powerful motif, one which raised many questions for me with regard to my relationship to the broader psychosocial and cultural world in which I lived. To use another example, learning something new or what I perceive to be complicated, like a new computer application, sometimes engenders within me fears and anxieties, alongside a sense of hopeless dependency. These can be uncomfortable and disquieting emotions and my first reaction is to do what I can to reduce their presence within my learning experience, or to structure my learning to insure that they don't present themselves. Typically, these fears and anxieties take shape in the form of an image, like a failed promotion, a humiliating performance, or stinging criticism from my students and peers. By staying with them, recognizing and naming them, not wishing them away like some kind of disease or pathology, I provide an opportunity to hear the voice of soul.

The purpose of the imaginal method or soulwork is not to analyze and dissect these emotions and feelings but to imaginatively elaborate their meaning in one's life. In contrast to Mezirow's (1991; Cranton, 1994) notion of transformative learning, in which we are encouraged to ask "how" or "why" questions about these feelings and emotions, we might simply ask "what:" What do these emotions feel like, remind me of? What other times I have felt this way, experienced these emotions? What was going on then? Who was all involved in that incident? As we elaborate these feelings and emotions, they may begin to take on the form of images. Sometimes, behind my fears and anxieties about demonstrating my competence rests an image of a young boy desperately seeking acceptance from his father and older brothers. Naming this image then allows me to ask, "Who is this boy and what would he have me do in this situation? What is he trying to tell me?" Other emotions, such as fear of confrontation and conflict, anger with authority figures, or a longing for community with my co-workers provide a similar basis for inner work. At times, it may be an aspect or idea within the work itself which becomes numinous. It draws us into it. We become fascinated, intrigued, caught up with this part of our work. As with all emotions and feelings within relationships, these images, too, can have its down-side. We can become too wrapped up in them, over-identify with them, become overwhelmed by their numinosity. We lose track of who we are, where we are, and we don't get the work done. As we recognize, name, and work with the images which animate these aspects of our worklife, we move toward a deeper, more conscious connection with these aspects of our selves. We befriend that person or persons within our psyche. Here we are talking about the transformation of ordinary existence into the "stuff of soul" (Moore, 1992, p. 205), where there is a meaningful connection through imagination between our work and our life experiences. These images provide access to the psyche, an invitation to the journey of the soul., of coming to know myself as a person. As they take shape within my consciousness, they provide an opportunity to deepen my

understanding of their meaning in my work life. As Moore (1989) suggests, we glimpse the soul through image.

Conclusion

Thus, work-based learning provides a context in which we are invited to participate in a journey of soul. The overall aim of transformative learning within this context, is not necessarily to develop or to grow towards wholeness, in a humanistic sense. These are objectives of a more spirited, heroic consciousness. Rather, the aim of transformative learning, as I am developing it here, is to deepen our self-understanding by recognizing and elaborating the different and sometimes contradictory essences that have set up housekeeping within our psyches and to learn to live with the tension that is created by recognizing and accepting their presence in our lives. This sort of learning encourages us to embrace the contradictory and paradoxical nature of our lives within work. In a sense, we might think of work as activating archetypal forces within the individual or the group, which then become manifest in particular images or fantasies. Images will lead us into deeper, more profound relationships with some of these archetypal figures, such as Power, Authority, Mother, Child, and Hero. Along with Compassion, we might recognize Contempt; Trust with Suspicion and Mistrust; Courage with Cowardliness. Instead of seeing these as characteristics of our work and the workplace, we might understand them as little people that populate the psyches of our ourselves and the organizations within which we work, autonomous entities with a life of their own independent of our will or desire to control or harness them for some worthy project of the ego. Work as text, then, through the particular meanings and symbols embodied within it, may evoke within individuals or the group images and fantasies which suggest ways in which the learning experience is or can be linked in a more profound way with the deep experiences represented in the group.

A mytho-poetic approach to transformative, work-based learning provides a holistic perspective for understanding how worker-learners come to develop deep knowledge of themselves. Understanding imagination as the source of all psychic life, including reason and rationality, has profound implications for how we think about, design, and implement all forms of work-based learning. Scholars within various settings for adult learning are suggesting how imagination and the mytho-poetic perspective are or can be reflected in our teaching and learning (Briskin, 1996; Dirkx, 1997; Fox, 1994; Whyte, 1994). Common to these various approaches are a reliance on "seeing" through the "eyes" of the imagination, of the heart, as opposed to the mind or the head, the merely rational. They suggests that such learning should also be an education of the heart, a journey of the soul, and imagination as a way in which the truth of the journey reveals itself in our lives at and in work.

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Perceptions of Learning Systems in Organizations

Dimensions of the Content and Organization of Learning Systems and Differences between Managers and Workers in nine Departments of a non-profit Organization.

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Learning systems can be described in terms of perceptions of managers and workers in the organization. Using a questionnaire to make this description, we compared both perceptions to find out which dimensions underlie these perceptions and what the differences are between managers and workers. The results indicate that compared with managers, workers think of the work orientation of learning programs as less important, have less preference for formal learning orientation and perceive less management-influence of the learning system. Hardly any differences were found between the departments of the organization.

One way to improve the learning system in an organization is to use organization development methods (French & Bell, 1995). These methods centre on the following procedure: first a description of the existing situation is made. This description is then discussed with the members of the organization and action plans to improve the existing situation are formulated. Finally these action plans are carried out in the organization.

The perception of the existing situation plays a crucial role in such procedures. The difficulty in working with perceptions, though, is the fact that there is no such thing as an objective reality. People perceive reality in their own unique way and make up their own unique description of this reality. The same goes for the existing situation in a learning system: in describing this situation, people use their own perceptions. So in trying to obtain a complete picture of a learning system by interrogating different actors one is bound to find different perceptions, though similarities can also be found.

A way to obtain a picture of the existing situation is to question different actors who are involved. In the case of the learning system of workers in an organization, that would be workers and managers, because they are involved in the making of this learning system. Based on their different posistions, they have different points of view.

This study traces the dimensions which underlie the perceptions that managers and workers have of the learning system of the workers. For each of these dimensions we have attempted to identify the differences and similarities between the perceptions of managers and workers.

It has been said (Senge, 1990) that the more actors are interacting and communicating, the more their perceptions will conform. Furthermore, one would expect the communication and interaction between actors in the same department to be more intens than that between actors in different departments. This would suggest that actors within a department would have more corresponding perceptions than actors in different departments of organizations. This would also apply to perceptions of the learning system of an organization. So finding out about differences and similarities in the perceptions of actors between organizations would give starting points for improving the learning system of these organizations.

In this study we compared actor perceptions of the learning system of workers in different organizations.

A learning system can be described as "a composite of actors (individuals and groups) functioning either within or outside an organization who undertake actions relevant to the learning of the members of that organization." (Van der Krogt, 1995).

Learning systems are dynamic systems developing and improving over time (Marsick & Watkins, 1990; Van Moorsel, 1997; Van der Krogt, 1995). A description of the learning system is the starting point for the formulation of action plans to develop and improve the existing learning system.

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Three main elements are distinguished in the learning system: the structure, the processes and the actors. The actors are internal and external trainers, but also managers and workers. The actors undertake activities in two processes: the development and the execution of learning programs. The content structure of the learning system relates to the content and form of the learning programs.The organizational structure of the learning system is related to the positions and the authority of the actors and the communication and consultation structure.

Research Questions

In our research we developed a measuring instrument to obtain information about the existing learning system of workers in an organization as perceived by managers and workers. The analysis of the results was aimed at the following research questions:

1. Which dimensions exist in the perceptions of the learning system held by managers and workers?
2. To which degree are managers different from workers on these dimensions?
3. To which degree do managers and workers in the nine departments hold different perceptions?

Method

Participants. The participants in this study were managers and workers in nine Dutch crisis centres for problematic youngsters. These centres, spread across different areas of the country, are part of one organization and therefore share the same organizational features.
Of the 731 questionnaires that were handed out at the nine centres, 358 were returned (49%). The response per centre ranged from 28% to 91%.

Procedure. Prior to this research a questionnaire was developed to measure perceptions of various aspects of the learning system. A trial version of the questionnaire was filled out by 50 training managers and as a consequence several items were rephrased. Two types of questionnaires were delivered to these nine centres, one for the managers and one for the workers. The respondents were asked to return the questionnaire within a week.

Measures. The purpose of the questionnaire was to measure respondents' perceptions of the actual learning system. Workers were asked about their perception of their learning system; managers were asked about their perceptions of the learning systems of their workers. The 107 items in the questionnaire referred to the following aspects of learning systems (Van der Krogt et al., 1993):

- development and implementation of learning programs in the learning system: the creation or improvement of the learning potential of learning situations in programs.
- contents of the learning system: the learning situations and the learning programs in an organization.
- organizational structure of the learning system: the positions of different actors and their relationships (e.g. HRD-managers, learners or external actors).

The participants were asked to answer the items with help of seven-point Likert scales varying from "not at all applicable" to "completely applicable".

Results

Five Dimensions in the Perceptions of Managers and Workers on the Learning System
With help of iterative factor analyses and oblique rotations, five dimensions emerged from the item pool of 107 statements. Cronbach's alpha coëfficients computed on the sample ranged from .73 to .91.

a. *Work oriented learning* (alpha = .91; 9 items). The degree to which programs are focused on the work and the problems related to it. An example of an item referring to this dimension is: "The content of educational and learning activities for workers serves to enhance professional knowledge".
The next two dimensions refer to the styles of learning in the learning programs:

b. *External learning orientation orientation* (alpha = .73; 4 items). The degree to which formal learning (off-the-job learning) is seen as important. An example of an item referring to this dimension is: "Workers acquire their expertise mostly by attending courses to improve their skills".

c. *Internal learning orientation* (alpha = .77; 5 items). The degree to which informal learning (learning on-the-job) is seen as important. An example of an item referring to this dimension is: "Workers acquire their expertise mostly by sharing knowledge and experiences with other members of the organization".

The next two dimensions refer to internal and external actors in the learning system:

d. *Management orientation* (alpha = .86; 10 items). The degree to which managers influence the learning system. An example of a statement referring to this dimension is: "In organizing the improvement of expertise, management plays a key role".

e. *External orientation* (alpha = .76; 7 items). The degree to which external actors develop and implement learning programs for the organization. An example of an item referring to this dimension is: "Our department provides documentation on learning activities organized by educational agencies or vocational education, is used".

Differences in Perceptions of Managers and Workers. A t-test for independent groups was carried out to determine whether differences exist between managers and workers. The results are shown in Table 1.

Table 1.
Differences between managers (M) and workers (W) on five learning system dimensions.

Dimension	Mean (M)	SD (M)	Mean (W)	SD (W)	t-value	df	p
Work Oriented Learning	5.10	.68	4.55	1.36	4.36	119	.000
External learning orientation	4.11	.98	3.30	1.48	4.96	88	.000
Internal learning orientation	5.10	1.02	4.82	1.18	1.29	357	.196
Management orientation	4.92	1.23	3.75	1.10	6.81	352	.000
External orientation	3.16	1.10	2.99	1.19	.96	350	.336

Differences between managers and workers are significant on the following dimensions: Work Oriented Learning (p = .000), External learning orientation (p = .000) and Management orientation (p = .000). These differences can be interpreted as follows: compared with workers, managers attach more importance to the content of learning programs (the learning programs are directed to work and work related problems), percieve the learning system as being externally oriented (more formal learning) and management-oriented (influenced by managers). No significant differences are found on the dimensions: Internal learning orientation (p = .196) and External orientation (p = .336).

Differences between the Nine Departments. ANOVAs with post hoc t-tests were used to investigate differences between the nine departments. Separate analyses were carried out for managers, workers and the total group of managers and workers. However, testing differences between departments for the subgroup of managers is a tricky problem.

The number of managers in each department is very low (varying between one and five) and the basic assumption of analysis of variance, that the nine departments should have equal variances, is violated. The latter is a consequence of the low number of managers in each department (with one or two managers in one department the variance can be zero). It was decided to only test differences for workers and for the total group.

The variables *work oriented learning*, with F(8,311)=1.310, p=.238 for the total group, and F(8,247)=1.170, p=.318 for the workers, and *internal learning orientation*, with F(8,322)=1.787, p=.079 for the total group and F(8,257)=1.624, p=.118 for the workers, didn't show any differences between the nine departments..

The variables *external learning orientation* (with F(8,321)=9.801, p=.000 and F(8,256)=3.807, p=.000 respectively), *management orientation* (with F(8,316)=3.240, p=.002 and F(8,252)=1.712,

p=.0961 respectively) and *external learning orientation* (with F(8,315)=5.28, p=.000 and F(8,250)=4.646, p=.000) show differences between the nine departments for the total group as well as for the workers with the exception of the management orientation of workers.
An inspection of the differences between the departments with post hoc t-tests revealed that one department was largely responsible for the significant ANOVA results.

Discussion

In this study we found five dimensions underlying the perceptions of managers and workers of the learning system of the workers. These dimensions refer to one main element of a learning system: structures. The work orientation of the learning program, the external and internal learning orientation all refer to the content structure of a learning system. Management orientation and external orientation refer to the organizational structure of a learning system. The other two elements were not found in the dimensions.

HRD officers view learning systems in a different frame of reference than organization members, e.g. managers and workers. The development of the instrument in this study was based on our interpretation of what a learning system is, not on the interpretation of the organization members. The fact that the other two main elements, processes and actors, were not found to play a role in the dimensions we found in this study might conceivably be due to this difference in frame of reference.

We have tried to interpret the differences in perceptions of managers and workers of the learning system of the workers in the organization. But the interpretation of the results is also based on our own perception of what a learning system is. Perhaps our interpretation of differences in perceptions between managers and workers is influenced by our own perception?

The results of the present study suggest that managers and workers within an organization have different perceptions of the learning system of the workers on the following dimensions: the work orientation of the learning program, external learning orientation and management orientation.

With the help of this information we are able to give a description of a limited part of the learning system, namely the structure. This description offers starting points for further development and improvement of this structure. However, on the internal learning orientation and management orientation dimensions no differences were found between the different actors. It appears that both managers and workers perceive informal learning as important (5.10 and 4.82). Based on this, we conclude that in improving the content structure of the learning system it could be useful to consider forms of informal learning, e.g. learning on the job.

Further, managers and workers agree on the influence of managers on the learning system. They both perceived this influence to be high (4.92 and 3.75). It is problematic to interpret this result because no questions were asked about how managers and workers feel about this. Therefore we do not know whether they interpret this result as positive or as negative and this makes it hard to infer what this would imply for initiatives to improve the learning system. The last step in organization development methods is essential: finding out what action plans can be formulated to improve the existing situation regarding the dimension "management orientation".

Both managers and workers were included in this study. But there are other actors involved in the learning system of the workers, e.g. trainers. These actors have their own perceptions of the learning system of the workers. It might be useful to explore this in further research.

Contrary to our expectations, the results show that there are greater differences in perceptions of the learning system within departments than between departments. On the basis of this result, one could question the assumption that interaction and communication have the most important impact on perceptions. Apparently, differences in positions and interests also have an impact on perceptions. As long as these positions and interests are structural, differences in perceptions are also structural.

A critical note regarding this result can be made, though. The differences in positions and interests of managers and workers are left aside in the third research question, because they were pooled in the different departments of the organization. This might explain that there are fewer differences between departments than within departments. In this case differences in positions and interests are the decisive factor for differences in perceptions.

Much organization development literature (e.g. French & Bell, 1995) focuses on changing communication and perceptions. According to our results, this might not be the only way to

develop organizations, because it will not change the existing differences in positions and interests. An additional option would be to try to create a situation in which these differences themselves are workable for the organizational members.

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